In the claims:

Please amend the claims as follows:

1.-68. (cancelled).

69. (currently amended) A method of detecting biological moieties comprising:

providing a plurality of compositions capable of characteristic spectral emissions, the composition comprising a compound and a semiconductor nanocrystal associated with the compound, wherein each of the members of the plurality is characterized in that:

the nanocrystal of the member of the plurality has an emission spectrum distinct from the other members of the plurality and a quantum yield of greater than 10% in water, and

the ~~composition~~ compound of the member of the plurality has a corresponding biological moiety distinct from other biological moieties in the sample;

allowing a sample containing or suspected of containing one or more biological moieties to interact with the compositions; and

monitoring the spectral emission of each interaction between each composition and each biological moiety of the sample.

70. (currently amended) The method of claim 69, wherein the ~~composition~~ compound comprises a molecular complex with a molecule associated with the nanocrystal complexed to a second molecule that interacts with the biological moiety.

71. (original) The method of claim 69, wherein each interaction between each composition and each biological moiety of the sample are monitored substantially simultaneously.

72. (original) The method of claim 69, wherein the spectral emission provides information about a biological state or event.

73. (original) The method of claim 72, wherein the spectral emission provides information about the amount of biological moiety in the sample.

74. (original) The method of claim 72, wherein the spectral emission provides information about the presence of the biological moiety in the sample.

75. (original) The method of claim 69, wherein the semiconductor nanocrystal is water-soluble.

76. (original) The method of claim 69, wherein the semiconductor nanocrystal comprises a core comprising a semiconductor material, and a layer overcoating the core comprising a semiconductor material.

77. (original) The method of claim 69, wherein the spectral emission is tunable to a desired wavelength by controlling the size of the nanocrystal.

Sub. D'

78.-95. (cancelled)

96. (new) The method of claim 69, wherein monitoring the spectral emission occurs in assays selected from the group consisting of: immunochemistry, immunocytochemistry, immunobiology, immunofluorescence, DNA sequence analysis, fluorescence resonance energy transfer, flow cytometry, fluorescence activated cell sorting, diagnostics in biological systems, and high-throughput screening.

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97. (new) The method of claim 69, wherein the interaction between the biological moiety and the composition comprises covalent interaction.

98. (new) The method of claim 69, wherein the interaction between the biological moiety and the composition comprises noncovalent interaction.

99. (new) The method of claim 69, wherein the noncovalent comprises hydrophobic interaction, hydrophilic interaction, electrostatic interaction, van der Waals interaction, or magnetic interaction.

100. (new) The method of claim 69, wherein the biological moiety comprises a small molecule.

101. (new) The method of claim 69, wherein the biological moiety comprises a protein, peptide or antibody.

102. (new) The method of claim 69, wherein the biological moiety comprises a nucleic acid.

103. (new) The method of claim 102, wherein the nucleic acid comprises DNA or RNA.

104. (new) The method of claim 69, wherein the biological moiety comprises an amino acid.

105. (new) The method of claim 69, wherein the biological moiety comprises a ligand.

106. (new) The method of claim 69, wherein the biological moiety comprises an antigen.

107. (new) The method of claim 69, wherein the biological moiety comprises a cell.

108. (new) The method of claim 69, wherein the biological moiety comprises a subcellular organelle.

109. (new) A method of detecting biological moieties comprising:

providing a plurality of compositions capable of characteristic spectral emissions, the composition comprising a compound and a semiconductor nanocrystal associated with the compound, wherein each of the members of the plurality is characterized in that:

the nanocrystal of the member of the plurality has an emission spectrum distinct from the other members of the plurality, and

the compound of the member of the plurality has a corresponding biological moiety distinct from other biological moieties in the sample and is associated with the nanocrystal by a ligand having at least one linking group for attachment to the nanocrystal spaced apart from a hydrophilic group by an alkyl or alkenyl group;

allowing a sample containing or suspected of containing one or more biological moieties to interact with the compositions; and

monitoring the spectral emission of each interaction between each composition and each biological moiety of the sample.

110. (new) The method of claim 109, wherein the hydrophilic group is selected from the group consisting of carboxylic acid, carboxylate, sulfonate, hydroxide, alkoxide, ammonium, phosphate, and phosphonate.

111. (new) The method of claim 109, wherein each interaction between each composition and each biological moiety of the sample are monitored substantially simultaneously.

112. (new) The method of claim 109, wherein the spectral emission provides information about a biological state or event.

113. (new) The method of claim 109, wherein the semiconductor nanocrystal is water-soluble.

114. (new) The method of claim 109, wherein the semiconductor nanocrystal comprises a core comprising a semiconductor material, and a layer overcoating the core comprising a semiconductor material.

115. (new) The method of claim 109, wherein the spectral emission is tunable to a desired wavelength by controlling the size of the nanocrystal.

116. (new) The method of claim 109, wherein monitoring the spectral emission occurs in assays selected from the group consisting of: immunochemistry, immunocytochemistry, immunobiology, immunofluorescence, DNA sequence analysis, fluorescence resonance energy transfer, flow cytometry, fluorescence activated cell sorting, diagnostics in biological systems, and high-throughput screening.

115. (new) The method of claim 109, wherein the interaction between the biological moiety and the composition comprises covalent interaction.

116. (new) The method of claim 109, wherein the interaction between the biological moiety and the composition comprises noncovalent interaction.

117. (new) The method of claim 109, wherein the noncovalent comprises hydrophobic interaction, hydrophilic interaction, electrostatic interaction, van der Waals interaction, or magnetic interaction.

118. (new) The method of claim 109, wherein the biological moiety comprises a small molecule.

119. (new) The method of claim 109, wherein the biological moiety comprises a protein, peptide or antibody.

120. (new) The method of claim 109, wherein the biological moiety comprises a nucleic acid.

121. (new) The method of claim 120, wherein the nucleic acid comprises DNA or RNA.

122. (new) The method of claim 109, wherein the biological moiety comprises an amino acid.

123. (new) The method of claim 109, wherein the biological moiety comprises a ligand.

124. (new) The method of claim 109, wherein the biological moiety comprises an antigen.

125. (new) The method of claim 109, wherein the biological moiety comprises a cell.

126. (new) The method of claim 109, wherein the biological moiety comprises a subcellular organelle.